



## BIOFUELS - Why They Are Critical to the World of Food

*"Food prices are suddenly rising. Unfortunately, a search for explanations can quickly become a hunt for a scapegoat.*

*Biofuels seem to have become that scapegoat. The storm of media comment about them has become louder and louder, to the point where it's now difficult to hear real debate above the shriek of the wind."*

*"But we must all make ourselves heard in the wind, otherwise good policy-making will be the victim."*

This statement on May 6<sup>th</sup>, 2008 by the Commissioner of Agriculture, European Commission helps explain the intent of the attached material. It was compiled to balance the 'storm' of media criticism about biofuels.

Biodiesel is a renewable alternative to diesel fuel, made from vegetable oils (canola, soy) or animal fats, for use in trucks, buses, trains, etc. Ethanol is a renewable alternative to gasoline, produced from corn and wheat, for use in cars.

### Leading global bodies responding to the food crisis have stated that biofuels are not the leading cause of higher food prices.

- There are many causes, recent and historical, to high prices<sup>1</sup>
- In 1998, speculative investments in commodity indexes totaled \$10 billion. In 2007, the total was \$142 billion.<sup>2,3</sup>
- During the past year, oil prices have jumped over 100%. In 1999 the world's oil supply sold for \$350 billion. This year it will sell for \$4 trillion.<sup>4</sup>
- Poor conditions impacted yields in major grain-producing regions of the world the last 2 years, drawing down stocks.
- Developing nations' consumption of meat has jumped significantly in recent years, particularly in China, increasing consumption of feed grains.
- The UN says "Biofuel has been made a culprit, but we don't see it as the major [factor] responsible for high food prices."<sup>5</sup>
- The world grows more food than it uses, and waste is rampant<sup>6</sup>; access to food is largely due to by inadequacy of distribution infrastructure, price increases and trade distortions, rather than physical scarcity.

*Most media reports are based on a simple, and often incorrect, analysis of the causes behind increase in food prices. Authoritative bodies, however, have recently cautioned against a one-sided assessment of the impact of biofuels, with analysis showing that biofuels use is having important positive benefits in the context of the food crisis. These are explained below.*

### Biofuels are a significant factor restraining global crude oil prices. Crude oil price increases have a significant impact on food prices.

- Biofuels provide 1 million barrels a day of fuels, moderating crude oil and refined product price increases; without biofuels, crude oil prices would be 15% higher.<sup>7,8</sup>
- Crude oil prices' effect on food production costs is comparatively much stronger than that of increased demand for biofuel related commodities.<sup>9,10</sup>

**The climate change emissions reduction value of Canadian biofuels is widely accepted: ~50-85% lower than fossil fuels. Climate change is projected to have a severe impact on food production in the near future in the most impoverished regions of the world.**

- UN says a retreat on biofuels can make “another problem – climate change-which is very serious, very long-term, and very fundamental -- worse at the same time.”<sup>11</sup>
- We have 10 to 15 years to stabilize the rise in global temperatures to 2°C. Severe drought and floods may result if we are unable to limit the rise to 2°C.<sup>12</sup>
- One billion rural poor will be most affected by climate change impacts such as natural disaster and related decrease in food production.<sup>13</sup>
- A 2% renewable diesel (biodiesel) standard in 2012 will reduce GHG emissions by 1.8 million tonnes. That's the equivalent of taking 300,000 cars off the road. A 5% inclusion rate would be the equivalent of removing 750,000 cars.<sup>14</sup>
- Growing canola sequesters carbon in the soil and reduced tillage practices mean less carbon is released.<sup>15</sup>
- Approximately 40% of BC climate change gases come from transportation (30% Canadian average).

**Biofuels can play an important role in food security for developing countries.**

- Biofuels are liberalizing trade in agricultural biofuel products.<sup>16</sup>
- Biofuels reduce the massive outflow of hard currency for developing nations' energy needs, allowing for investments in agricultural infrastructure.<sup>17</sup>
- Higher food prices, combined with input support, incent increased food production in developing nations.

**The byproducts of biofuels production are a significant new source of efficient protein to produce dairy products, meat, and fish for domestic use and export.**

- Canola seed is 43% oil and 57% meal, a high protein animal feed.
- Production of a litre of canola oil (which can produce a litre of biodiesel) creates sufficient high-quality protein nutrient by-product to produce 4 litres of milk or one broiler chicken. Dairy feed is the predominant use of canola meal.<sup>18</sup>

**Canada's agricultural producers can provide sufficient feedstocks for provincial and federal biodiesel mandates, supply domestic food needs, and expand by 40% our exports of food oils.**

- Canada can maintain and grow canola exports by 40% and have a 2% federal standard no later than 2012<sup>19,20</sup>, and a 5% BC biodiesel standard in 2010.<sup>21</sup> Canadian agricultural output has room for expansion with sustainable means.<sup>22</sup>
- Cold-damaged canola unsuitable for food use can provide additional farm income when used in biodiesel.
- Approximately 150-200 million litres of animal fat is available for biodiesel use in Canada.
- When prairie farmers have negative net farm income - for the majority of years between 1995-2005 - there is little incentive to expand production, especially when input costs (e.g., diesel & fertilizer) continue to rise.<sup>23</sup>

**Canadian biodiesel feedstocks do not pollute waterways, deplete carbon in soils, or come from rainforests. Canadian farms are continually improving their growing practices.**

- Canadian feedstocks meet the sustainability criteria in use in the UK, and under development in the EU.<sup>24</sup>
- Canadian policy will incorporate sustainability considerations in government support programs.

**The current generation of biofuels is critical to a successful adoption of the next generation of non-food biofuels.**

- Retreat on first generation biofuels will substantially delay onset of 2nd generation non-food biofuels.<sup>25</sup>
- A stable market based on first generation (food crops) can cut down the considerable risks faced by potential investors in second-generation fuels (based on non-food crops).
- Production facilities for some advanced fuels could be built as extensions to first-generation plants.
- First-generation biofuels companies are currently providing the commercial platform for bringing 2nd generation feedstocks and technologies to market

## CONCLUSION

1. Support for biodiesel made in Canada is smart, responsible policy in a world of high petroleum prices, urgency on second generation biofuels development, and most importantly, immediate action on climate change.
2. Canadian-made biodiesel will be made with significant GHG savings and minimized environmental impacts.
3. Scapegoating biofuels will not only have a direct negative longterm impact on food production, but will also distract governments from focusing policy reform efforts on more significant factors such as energy dependence, speculative commodity trading, distorting developed-world agricultural subsidies, international tariffs and trade barriers in basic food commodities, and years of underinvestment in agricultural infrastructure in the developing world.<sup>26</sup>

*“In short, there is no doubt that biofuels are part of the solution to coping with climate change. But when it comes to the debate on the global food crisis, they should not be the focus of discussion. It is time for the world’s agricultural systems and all the issues associated with food production to come under the spotlight instead.”*

*- International Union for Conservation of Nature, April 2008*

## SUMMARY

Canadian-made biodiesel offers a smart, green biofuel option:

- many life-cycle analyses have proven it to reduce greenhouse gas emissions by 75-85 percent;
- it has the highest energy balance of any commercially available liquid fuel - providing over 3 times the energy output than is required to produce it;
- our biodiesel feedstocks are produced domestically and sustainably;
- it supports healthy farm communities and our rural economy;
- it dramatically reduces pollution and carcinogenic air toxins; and
- it is a critical bridge to the next generation of renewable diesel fuels

## ENDNOTES

<sup>1</sup> UN World Food Programme, 4/29/2008—“UN Press Statement: a unified UN response to global food challenge.”

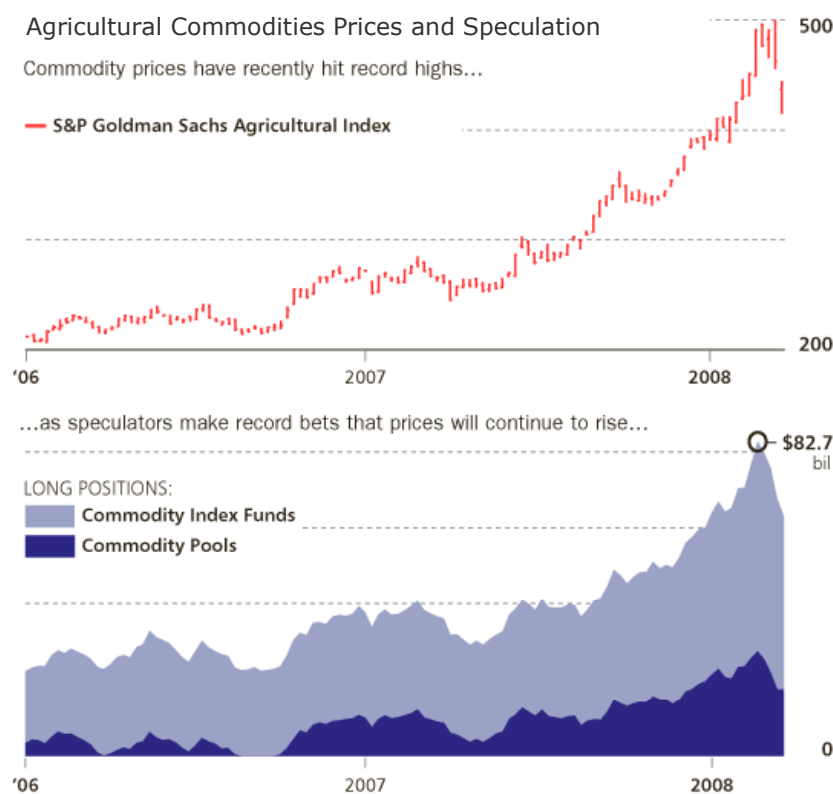
“We consider that the recent dramatic escalation in food prices worldwide has evolved into a unprecedented challenge of global proportions that has become a crisis for the world’s most vulnerable, including the urban poor.

This crisis has multiple causes, including rapidly increasing energy prices, lack of investments in the agricultural sector, rapidly rising demand for food, trade distorting subsidies, recurrent bad weather and environmental degradation, subsidized production of bio-fuels that substitute food production, and the imposition of export restrictions leading to hoarding and panic buying.”

<sup>2</sup> Jim Lennon, of Macquarie Bank in London, as quoted in Financial Times, “Analysts try to prick idea of a commodity bubble”, 3/10/2008

<sup>3</sup> Barrons, “Commodities: Who’s Behind the Boom?”, 3/31/2008:

“To get a further idea of the impact of these speculative bets...in soybeans, the index funds have effectively bought 36.6% of the domestic 2007 crop, and that if you add the commodity pools, the figure climbs to 59.1%. In wheat, the figures are even higher -62.3% for the index funds alone, and the figure jumps to a whopping 83.6% if you add the pools.”



<sup>4</sup> Cliff May, “American farmers are not causing famines”, Scripps News Service

<sup>5</sup> Jeff Tschirley, Chairman, Inter-Departmental Working Group on Bioenergy, UN FAO

<sup>6</sup> The UK alone throws away 6.7 million tonnes of food every year, roughly a third of what is purchased. Nearly one million tonnes of avoidable food waste is thrown away whole, untouched or unopened. Municipalities spend \$1.6B collecting and disposing of food waste. (Waste & Resources Action Programme, Oxon, UK- 2008)

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<sup>7</sup> International Energy Agency, Monthly Report, May 2008.

Biofuels will account for 63 percent of oil supply growth from non-OPEC countries this year, taking global production of crop-based fuel to more than 1.5 million barrels a day. Biofuels output is expected to grow by 425,000 barrels a day this year, a 57 percent increase from a year ago.

"While it seems unlikely that biofuel targets will be reversed in the near future, it is sobering to realize the amount of oil that would be needed to replace them."..."Just offsetting the biodiesel and ethanol added to the U.S. and European markets since 2005 would require around 1 million barrels a day of additional crude oil supplies to be processed."

<sup>8</sup> Merrill Lynch & Co commodities market strategist Francisco Blanch:

"Oil and gasoline prices would be about 15 percent higher if biofuel producers weren't increasing their output. That would put oil at more than \$115 a barrel, instead of the current price of around \$102. U.S. gasoline prices would have surged to more than \$3.70 a gallon, compared with an average of a little more than \$3.25 today."

<sup>9</sup> OECD, "Agricultural market impacts of future growth in the production of biofuels", Paris [2006].

<sup>10</sup> FAO, IFAD and WFP paper: April 2008, Berne, "High food prices: Impact and recommendations."

[P]etroleum prices and food prices are highly correlated, with an estimated correlation coefficient of more than 0.6. The rapid rise in petroleum prices exerted an upwards pressure on food prices as fertilizer prices nearly tripled and transport costs doubled over a two year period.

<sup>11</sup> John Holmes, Chair, UN Task Force on Global Food Crisis (UN under-secretary general for humanitarian affairs), May 1, 2008:

"We should avoid a knee-jerk response. Biofuels were developed in response to a very serious problem, which is the effects of climate change and the need to mitigate the effects of climate change and to reduce emissions. They weren't invented just for fun. Therefore, we need in whatever we're doing to make sure that food production remains high, to make sure that we're not making another problem—which is climate change, which is very serious, very long-term, and very fundamental—worse at the same time."

<sup>12</sup> Intergovernmental Panel on Climate Change, "Climate Change 2007: Synthesis Report — Summary for Policymakers"

<sup>13</sup> R.K. Pachauri, the Chair of the Intergovernmental Panel on Climate Change (UN News Centre – May 4, 2006)

<sup>14</sup> National Research Council of Canada, "Highlights", December 2007.

<sup>15</sup> Canola Council of Canada, April 2008; "Canola Biodiesel"

<sup>16</sup> Developed-world agricultural industries have traditionally shut out competitive products from developing-world farmers. Energy scarcity in OECD countries is behind recent decisions to rethink tariffs on imported biofuels, providing developing world exporters with greater markets access and raising the value of their crops.

Jose Graziano Da Silva (*Regional Representative for Latin America and the Caribbean, UN Food and Agricultural Organization*), May 12, 2008:

"Agro-energy can help sustain the expansion of poor countries and usher in a new dynamic of trade independence by industrialising biofuel crop farming and creating bridges between family agriculture and a peak sector of the global economy that is here to stay."

<sup>17</sup> The Economist, "The end of cheap food", 12/6/2007.

Most developing countries have significant negative balance of trade payments largely from purchases of imported oil, leaving improvements in agricultural productivity and other poverty-reduction programs under funded. In developing countries, 2/3<sup>rd</sup> of income is derived from farming. Income gains from productivity in farming in developing countries are 3x gains from investments in industry.

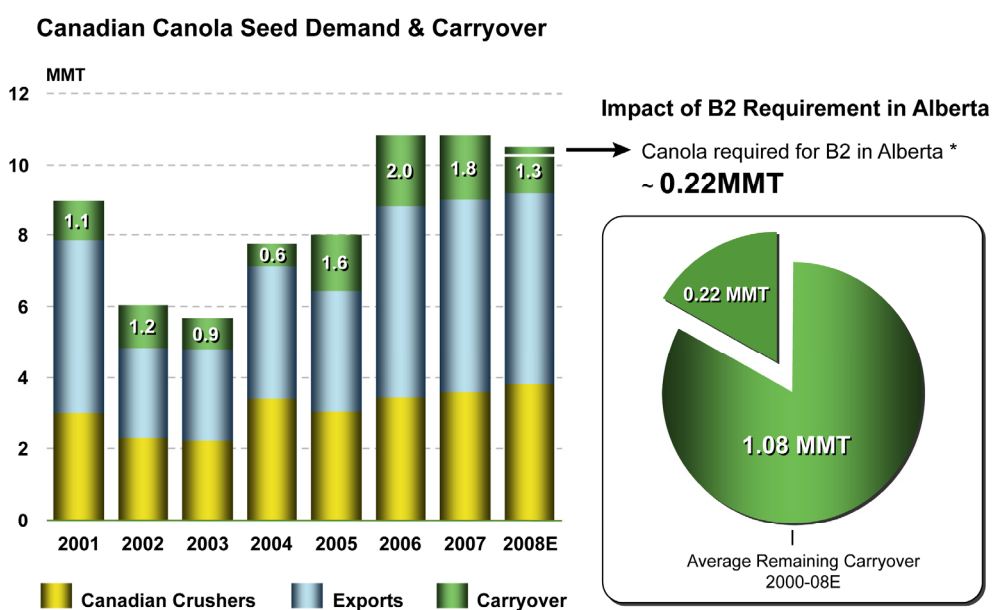
Small-scale farmers in developing world will make their own food-or-fuel allocation decisions based on their local and national situation.

<sup>18</sup> Canola Council of Canada, June 2008; University of Saskatchewan, May 2008

<sup>19</sup> Canola Council of Canada, April 2008; "Canola Biodiesel"  
 "The federal government has announced that 2% of petroleum diesel must be replaced with renewable diesel (biodiesel) by 2012. Assuming a canola/tallow blended feedstock, this would require about 1.0 million tonnes of canola seed. Canadian farmers can easily supply the canola required to fill this mandate. The "carryover" (unsold volume) of canola seed was 1.59 million tonnes (MT) in 2004/05, 2.02 MT in 2005/06, and 1.58 MT in 2006/07."

<sup>20</sup> Canola Council of Canada, 2007; "Canola - Growing Great 2015"

<sup>21</sup> Data from Canola Council of Canada, Canadian Rendering Association, and Environment Canada. Carryout is the crop unsold at the end of each crop year, and represents the surplus 'buffer' that helps regulate supply and demand from year to year. Large carryouts are part of the market signals to reduce acres planted in the subsequent year.



\* Assuming 2010 biodiesel volume of 136 ML, produced from 75% canola and 25% rendered feedstocks

<sup>22</sup> For example, 80% of the BC's grain production occurs in the Peace River region of BC. In this area, annual seeded acres have decreased by 36% in the last 20 years - the majority of which occurred in the last 5 years. Farming these acres has been financially unattractive. (See CFA report on farm income crisis.)

Crop Production Census Data – BC Peace Region

Year	Wheat Acres	Oats Acres	Barley Acres	Dry field Peas Acres	Canola Acres	Forage seed for seed Acres	Total Acres
1986	87,935	37,393	134,046	-	104,034	35,882	399290
1991	100,209	51,211	75,942	1,207	98,045	52,597	379211
1996	85,408	58,784	76,275	8,080	61,446	44,945	334938
2001	65,120	60,979	52,669	7,334	55,726	89,447	331275
2006	31,379	59,560	34,017	5,633	57,594	65,908	254091

Source – Stats Can Census

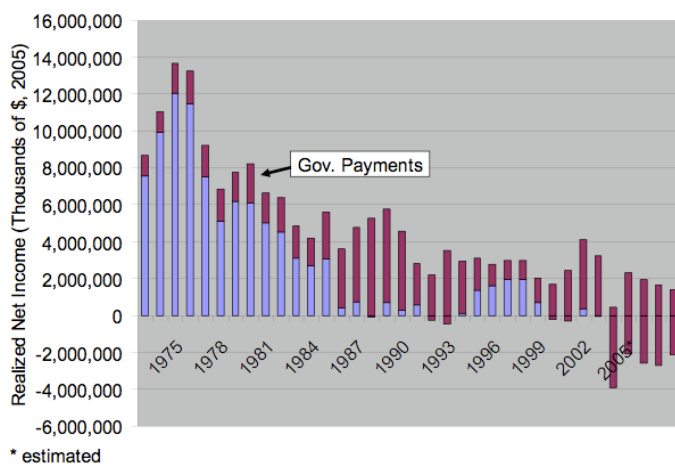
<sup>23</sup> Canadian Federation of Agriculture, “Measuring the Farm Income Crisis” (March, 2007)

*Commentary on study:*

This study was conducted in 2005, revised in 2007. It reports that for many years, Canadian farm incomes have been in decline. Since 2002, however, farm incomes have continued to decline to their worst in recorded history (as of the 2007 revision date.)

Also, in the decade of 1996-2005, Farm Debt grew a total of 85%. Many farmers assumed an increasing amount of debt to allow their farm to continue operations.

In recent years, the costs of inputs such as diesel fuel and fertilizer have soared. Many input costs have been directly impacted by the rise in crude petroleum prices. High input prices have had a dual negative effect for farmers: despite record crop prices, net income will be modest, and, should the harvest be below normal levels due to adverse weather, significant losses could be realized as input costs are incurred months in advance of the harvest. High crop prices do not remove the element of risk in farming. The higher the input costs, the greater the stakes.



<sup>24</sup> Canadian biodiesel feedstocks are increasingly produced under more environmentally sustainable criteria. This is based on unused capacity, sustainable farming practices (with lower nitrogen varieties under development), fewer pesticides, less or no irrigation, widespread low-till practices to promote carbon sequestration in soil, and little or no land-use changes required to meet additional demand.

<sup>25</sup> First generation biofuels producers (predominantly using food-based feedstocks) provide the commercial platform for commercializing 2<sup>nd</sup> generation (non-food feedstocks) technology. 2<sup>nd</sup> generation technologies and feedstocks for renewable diesel fuels are less well developed than those for cellulosic ethanol, and costs may prove to be prohibitive. Investing in first generation biofuels is critical to overcoming policy, regulatory, technological, financing and commercial hurdles for 2<sup>nd</sup> generation biofuels.

European Commission, Agriculture and Rural Development, 5/6/2008 — Commissioner Mariann Fischer Boel:

“Only if we [EU member states] move together – with clear objectives - can we get industry to adapt to a world with biofuels, give confidence to investors, build a well-functioning internal market, bring down production costs and make second-generation fuels economically viable. With this [10%] target, we can already start getting benefits from the better first-generation biofuels. And we can use them as a bridge to take us to the next generation.

I underline the importance of that bridge. A stable market can cut down the considerable risks faced by potential investors in second-generation fuels. Also, production facilities for some advanced fuels could be built as extensions to first-generation plants. This is a bridge that we can cross; without it, I fear that the leap to the second generation may be so far that we can't make it.

So without a binding target, it's very likely that:

- The internal market would be fragmented
- The more advanced products would never take off”

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<sup>26</sup> What Will Really Address Issues Of Hunger In Developing Countries:

- In the short term protecting the most vulnerable may require direct food distribution, targeted food subsidies and cash transfers, and nutritional programmes including school feeding.
- Those most vulnerable to food price shocks need to be protected. Safety nets and social protection can reduce malnutrition that has lifelong consequences, prevent distress sales of assets, and allow investments in education and health that high food prices make more difficult, all of which help keep households from falling into poverty traps. (*FAO Conference Briefing "High-Level Conference On World Food Security: The Challenges Of Climate Change And Bioenergy"*)
- Invest in developing world agriculture infrastructure. Higher food prices help develop sustainable agriculture, as they provide incentives to the private sector to invest and produce. Poor rural producers particularly need support to expand their production and ability to market, as they are least able to respond to changing market signals.
- Fix subsidies and import/export policies that impair agricultural trade and capacity. Many countries have restricted exports in attempts to reduce price pressure on domestic production. While such barriers sometimes help to contain pressures on domestic prices, they can also signal problems and lead to panic buying on domestic markets. In some countries with price caps or export restrictions on food crops, farmers have reduced planting of cereals in the face of low domestic prices for their products coupled with high prices for inputs such as fuel, seeds and fertilizers. (*National Center for Policy Analysis, March 2006—"Farm Subsidies: Devastating the World's Poor and the Environment"*)

"Subsidized agriculture in the developed world is one of the greatest obstacles to economic growth in the developing world. In 2002, industrialized countries in the OECD spent a total of \$300 billion on crop price supports, production payments and other farm programs. These subsidies encourage overproduction. Markets are flooded with surplus crops that are sold below the cost of production, depressing world prices. Countries with unsubsidized goods are essentially shut out of world markets, devastating their local economies.

Every year, farm subsidies cost developing countries about \$24 billion in lost agricultural income."

- Address the distorting role that speculative commodity and index funds are playing in the recent volatility of agricultural commodities.
- Reduce the flow of hard currency from developing world to petroleum purchases. OPEC countries earned \$675 billion in revenue in 2007 and are on track to bring in \$863 billion in 2008. (*EIA, OPEC Revenues Factsheet*). All but 2 of the 22 most undernourished countries in the world import 100% of their oil from abroad. (*Thirty-first session of IFAD's Governing Council, February 2008, "Growing demand on agriculture and rising prices of commodities."*) Many of those countries had a minority share of their grains consumption supplied with imports. The top 39 oil refiners earned \$247 billion in 2007. (*Fortune Magazine, "Fortune 500", 2007*)
- Expand responsible production of smart biofuels in developed and developing world to both drive agricultural investment and reduce monetary outflows for energy.